# VIRGINIA WILDLIFE

OCTOBER 1987

ONE DOLLAR

# VIRGINIA WILDLIFE

Dressed in nearly identical dark gray suits with white shirts and striped ties, both wearing glasses to read the fine print of proposed regulations, the two white heads almost touched, as the men leaned toward one another trying to hear what the other was saying. The two senior board members, Latane Trice and Leon Turner, were conferring on the quail season at a recent Game Department public hearing. On the right and wrong of it, not on the expediency of it. Latane looked up, scowled once, and then began to reprimand the audience for thinking too much of themselves and too little of the game they hunted.

If you hunt in Virginia, you don't have to learn respect for your elders. We who hunt and fish never look at the old-timers and wish they would quit talking. We know better. We'll stop in our steps to talk to them. We'll jump out of our trucks on the way to a dove field to sit with them awhile. And it's hard to go on, once we've started them up.

You see, these men can tell you how it used to be. How they used to hunt with a dog that slept on their beds and hunted with a shotgun with only one shell. How they used to have great barbecues after dove hunts with friends they never lost track of.

Sooner or later, you'll find yourself going to go back to the white-haired men. You're gonna go back, and sit there rocking with them on their porches every Sunday from noon 'till they get tired of you, and send you home.

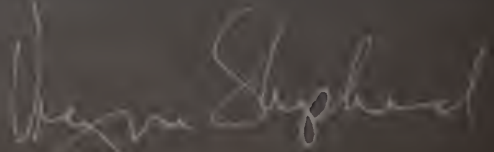
They'll start in first talking about respect for game and people. Talking about the good they've seen and the bad they've been seeing too much of these days. And they'll tell you how to change that too, if you'll listen. I've heard Latane tell me so. He screws up his forehead so that his white eyebrows almost touch, sticks out his lip and glares at me while he's talking. Puts the fear of God in you, he does. But only because he believes in doing right by the game and by people.

We have so much to learn about living from those white-haired hunters. So much to learn about making friends, and keeping them. So much about doing good just for the heck of and expecting others to do the same. Because, in these men you find the essence of hunting. The spirit, maybe that we hope we have when we get grizzled around the muzzle and long in tooth. Because, what these men show us is that it's OK to believe in something. It's OK to get choked up talking about that dog that pointed birds every year 'till he died, and mad as a coon about people who don't treat wildlife and people with gentleness.

Latane used to fire up the Game Department meetings during his term as commissioner. He was known to have started some pretty mean brush fires in some people, but he got 'em to start thinking. To start putting their hearts on the line as well as their heads.

I'm not sure at what age you qualify for this select group, but I wonder how much of my generation will ever achieve the kind of dignity these men have gained by living through so much for 70 years or more. I see my contemporaries wrapped up in the business of making enough money to buy second houses and leases on hunting land. And I see them making trips once a year out West or to places like Africa with clients and acquaintances they may have just met over lunch. They buy brand-new shotguns, send away for dogs with gold-edged pedigrees, and have their secretaries make their hunting arrangements for them. But I wonder how many of us will be sought after when we're 60 or 70 years old? How many of us will be able to tell the stories that will make a youngster's face crumple or his dreams take off?

Well, if we lose that white-haired wisdom, we lose it. Mayhaps something better will replace it. But, I hope I'm not around about that time. Because I intend to keep making that trip down to King and Queen County to the cornfield with the Trice nameplate hanging down from a pole at the driveway. I intend to keep bringing my bird dog down to Latane's just as long as he can stand it. And I intend to keep leaving their place with a hug from him and his wife Louise. Because I don't intend to forget what they've been trying to teach us, and being grateful for it all.



Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources

Commonwealth of Virginia
Gerald L. Baliles, Governor



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# October Issue

Volume 48, Number 10

*Need to know where to hunt ducks this year? Bob Gooch details the public waterfowl hunting options available starting on page 18. Drake mallard; photo by Lynda Richardson.*



# Cover

Male wood duck (*Aix sponsa*); photo by Steve Maslowski.

# Virginia's Wild Rice

## A Gourmet's Delight, for Man, Beast, and Fowl.

by Nancy Hugo

Native Americans have eaten it for centuries, early explorers and trappers subsisted on it for months, specialty stores sell it for $8 a pound, and it's one of the best duck foods around. It's *Zizania aquatica* or Northern wild rice, and it's abundant in Virginia's coastal marshes. The only problem for both gourmets and waterfowl who'd like to feast on it, are the redwing blackbirds who usually get there first.

The wild rice in Virginia's freshwater tidal marshes is the same rice harvested in Minnesota as a gourmet food item. (We also have Southern wild rice, a different species.) It is in the area around Lake Superior that wild rice grows in greatest abundance, but wild rice also thrives in Atlantic freshwater marshes.

Wild rice requires shallow waters with muddy or silty bottoms where there is enough water movement to prevent stagnation. Conditions on many of Virginia's freshwater tidal rivers are perfect. Tidal freshwater zones on the James, Rappahannock, Potomac, Chickahominy, Mattaponi and Pamunkey all have impressive stands of wild rice. The Pamunkey and the Mattaponi are Virginia's rivers richest in wild rice, and the Pamunkey's Lilly Point Marsh alone has over 400 acres of wild rice.

No one is quite sure how many total acres of wild rice there are in the state. At one time, marine biologist Gene Silberhorn of the Virginia Institute of Marine Science estimated that we had about 1,000 acres, but the marsh inventories he and his colleagues are conducting have shown that we have more. The marsh inventories have not been completed, but already the inventories indicate 1,114 acres in New Kent County alone and over 1,000 acres in James City County as well.

Historically, wild rice could be found in shallow lakes and slow moving waters from Canada to the Gulf of Mexico and from the Plains states to the Atlantic. Dredging, drainage, and pollution have wiped out many stands, but Virginia's wild rice marshes remain remarkably intact. The only dramatic reductions in our wild rice populations probably occurred in the 1930's when the Chickahominy River was dammed.

"Most of the habitat in which you

**Opposite:** *Wild rice on the Mattaponi River; photo by Bill Portlock.* **This page:** *Redwing blackbird; photo by Lynda Richardson.*

*Wild rice; photo by Bill Portlock.*

# Virginia's Wild Rice

*"A wild rice marsh is a healthy environment, fertile and rich in other wildlife foods."*

find wild rice has not been destroyed as our brackish marshes have," says Gene Silberhorn. "Most development that requires waterfront property occurs in brackish marshes."

What's nice about having so much wild rice in our freshwater marshes is what it indicates about the environment. A wild rice marsh is a healthy environment, fertile and rich in other wildlife foods. The vegetation there is dense and diverse, with as many as 50 species of plants per acre, including pickerel weed, arrow arum, smartweed, water hemp, water dock, and duck potato, thriving in proximity to wild rice.

The wild rice plant itself is beautiful. The sword-like leaves emerge from the marsh mud in late spring, and by September the 5-8′ plant has sent up graceful panicles of yellow-green flowers. Female flowers at the top of the panicle mature first, then the male bell-shaped flowers lower on the stalk. The seeds mature in early fall, but they don't stay on the plant for long.

Flocks of redwing blackbirds and bobolinks descend as the grain matures. They settle in on the plants and pluck the developing rice from the stalks. Wading birds like sora eat the seeds that fall into shallow water or that lie exposed on the ground when the tide is out. Later arrivals like teals, black ducks, mallards, wood ducks, and Canada geese, however, often arrive to find slim pickings in our wild rice marshes. While an important food in the Northeast for migratory waterfowl arriving just as the wild rice matures, once the birds land in Virginia, most of the wild rice has already been eaten. The leftovers spilled by the blackbirds and boblinks are scavenged by diving ducks feeding on the seed that has settled into the mud.

By winter a wild rice marsh looks like dense mat of fallen plants and crumpled foliage, but even among this debris, waterfowl find food. According to Gene Silberhorn, ducks and geese dig and eat wild rice rhizomes over the winter, giving the marsh the look of a plowed field by the time they are through with it.

You'd think such heavy feeding would reduce the wild rice population, but it actually has the opposite effect. The waterfowl are like wild rice farmers, cultivating the fields where next year's wild rice crop will grow. Their churning up of the marsh is like tilling the soil, making it more receptive to seeds the blackbirds have spilled.

The redwing blackbird's voracious appetite for rice is well known in the deep South where they can wipe out an entire domestic white rice crop, but the name "rice birds" applied to them in Louisiana could as easily be applied to them here. Although wild rice is only remotely related to white rice, blackbirds find it equally delicious. It seems there is no position a blackbird is unwilling to assume to pluck a wild rice grain from a swaying wild rice stalk. They often behave like acrobats as they perch on one stalk and try to grab grain from each other.

Other wildlife use wild rice as cover and nesting sites. Beavers use the stalks to patch their dams and muskrats use them for building lodges. Muskrats also eat the leaves and stems of the plant.

So valuable is wild rice to wildlife that it's logical to wonder if we shouldn't plant more of it. Both plants and seeds are available though nurseries that specialize in wildlife food, but conditions have to be perfect to get them to grow. Wild rice will not usually grow in bodies of water with no streams running in or out of them, in waters salty to taste, in marl bottom lakes, in dark brown acid waters, or in water high in alkali salts. It grows best in freshwater streams, lakes, ponds, or marshes that have a change of water, soft mud bottoms, and water six inches to three feet deep.

The seed also needs to have been stored properly if it's ordered from a nursery. In its natural state, wild rice seed falls into the water when it's fully ripe, it works its way into the soil with the movement of the water, and it stays dormant over the winter. Seed that has dried out will not grow, so nurseries have to keep the seeds in moist cold storage before shipping. They recommend that the seed be broadcast in the fall. It will sink to the bottom of the water and, under the right conditions, germinate in the spring. A bushel of

wild rice seeds costs about $115. Wild rice plants are also available, but they're not easy to ship and must get back into the water immediately. Plants cost $120 per thousand, and a thousand plants will plant an acre.

Gene Silberhorn believes that an alternative preferable to planting more wild rice is protecting the wild rice marshes we have. According to Silberhorn, most wild rice acreage in Virginia is privately owned and the lands are often leased by exclusive hunt clubs. At the moment there are few threats to the marshes, but impoundments loom as threats in the future. Already proposals have been made to dam part of the Pamunkey River as a public water source, and an impoundment on Ware Creek in New Kent County has been proposed to provide water for James City County. As demands for public water sources grow so will threats to the sensitive environments in which wild rice grows.

In Minnesota, where some Chippewa Indians still harvest the rice from canoes, wild rice fields are heavily protected. Not only is there a "ricing season," but harvesting requires a $10 license. The canoe used to collect the grain can be no more than 18′ long and 36″ wide, and the boat has to be propelled through the stand with a push pole to avoid damaging the stalks.

Agribusiness has now gotten into the business of growing and harvesting wild rice for the gourmet food market, but when native Americans and natural food enthusiasts gather the rice, some of them still do it the way the Chippewa and Sioux did centuries ago. Traditionally, an Indian man poled the canoe through the rice field while a squaw sat in the front of the boat and pulled the stalks over onto the boat with a stick. She used another stick to knock the grains off the stem. When the bottom of the boat was filled, they went to shore where waiting helpers roasted the rice in iron kettles. Indians then tread on the rice in a hole lined with deerskin to remove the hulls. (Gene Silberhorn has a high tech method for removing the hulls—he zaps the grains in the microwave.)

The Indian harvest often lasted several weeks because the grains ripen on the stalks at different rates. At best, Indians working by hand could harvest about 100 pounds of wild rice per acre compared with a typical harvest of 4,000-6,000 pounds per acre for white rice.

Today genetic improvements have made the wild rice heads less likely to shatter, and special combines have been developed to harvest the cultivated grain from specially planted fields. Even Indians, who once fought wars over wild rice lands and still retain treaty rights to many of them, have gotten into mechanized harvesting. Ninety percent of the wild rice we buy now is from planted fields harvested by combine. Still, a wild rice field mechanically harvested yields only about 700 pounds of wild rice per acre, and if all the wild rice harvested in the country were parceled out to each of us, we'd each get only 2/5 of an ounce.

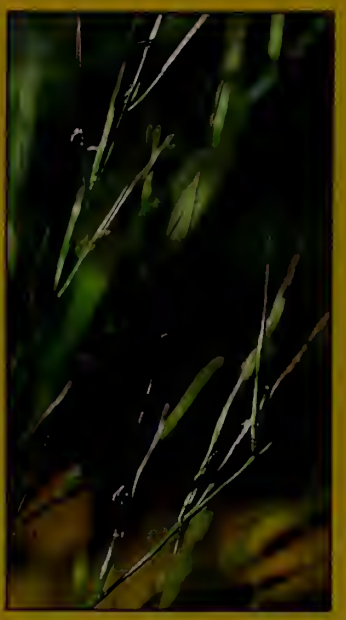
Although native Americans had been eating it for centuries, wild rice was unknown to European botanists until the 1750's. The Swedish naturalist Peter Kalm first described it this way:

"In North America where the plant grows wild, it is used as food by all the savage nations, who yearly collect quantities. Wild ducks are particularly delicious when the rice is ripe, for at that time they live on it almost entirely. If we could succeed in getting this rice to grow and ripen here we would have gained a great deal, for the wettest places would become as productive as fields if the plant would stand our winters... The greatest difficulty will be to find a method of sowing seeds so they will germinate. We still know very little about nature's method of sowing the seeds of plants growing in water."

Today this grain—our only native cereal grain—still grows relatively undisturbed in our marshes. To grow it is difficult, to buy it is expensive, and to harvest it is painstaking, but it's easy to appreciate in our marshes where wildlife have been enjoying it for centuries.

Both wild rice plants and seed are available from Wildlife Nurseries, P.O. Box 2724, Oshkosh, Wisconsin, 54901. □

*Nancy Hugo is an accomplished freelance writer living in Ashland, who specializes in gardening and the outdoors.*



# Virginia's Wild Rice

# MAKING YOUR

*With the guidance of expert decoy maker Grayson Chesser, this two-part article shows you step-by-step how to make your own decoys.*

*story & photos by Curtis Badger*

The shooting of ducks is hardly sufficient reason to go hunting anymore. With the population of most species alarmingly low, and with limits correspondingly stringent, the success of a waterfowling trip is seldom measured by the number of birds that come to a final roost in the family freezer.

And so it should be. Few sports offer the tradition, the ritual, and the magic of waterfowling. And the reason we go has not so much to do with the shooting of ducks as with the ritual of hunting. The ducks give the sport legitimacy, but it is the peripheral aspects of the hunt that give us pleasure.

We spend countless off season hours training our retrievers, we build duck hunting boats, we buy special duck hunting clothes, and as soon as the first chill of fall arrives, we begin scouting prime waterfowl habitat and being especially nice to local landowners.

There is something in this that warms the soul, something that only a hunter can understand. And it has very little to do with the shooting of ducks. It is the reason that hunters get that far-away look in their eye when they pick up a classic waterfowling gun and gently run their fingers over the fine, hand-engraved receiver. It is the reason we buy prints of ducks flying over a saltmarsh on a winter day. It is the reason we buy overpriced decoys that a generation ago knocked about in the bottom of a hunter's gunning skiff, and that now occupy a position of honor in our homes.

These things prolong the hunting experience; they are tokens that help us to vicariously escape our mundane existence, to enjoy what the Spanish writer Ortega called a vacation from the human condition.

None of these tokens is as personal and expressive as the decoy. What could be finer than to hunt over a rig of decoys that you carved and painted yourself? There is something magical about decoys anyway, the way they can make ducks suddenly appear from the pre-dawn darkness, and if the magic is there with your discount store plastic ducks, think what it could be with a rig of individual cedar stools you made yourself.

Grayson Chesser of Jenkins Bridge on the Eastern Shore is one of the best decoy makers I know. Grayson's decoys are carved in the classic tradition of coastal decoy makers, whose stools were designed to be shot over, not put on a shelf. Grayson's decoys are working decoys in every aspect,

# FIRST DECOY
## Part I

although given the current passion for decoy collecting, few of his carvings get beyond the bookcase in the purchaser's den, which is a shame, but understandable. Among my most indelible waterfowling memories are of sharing a blind with Grayson and watching the dawn slowly illuminate three dozen of his handcarved mallards, black ducks, and teal.

I have watched Grayson carve dozens of birds, and it was inevitable that I would before long get the urge to try it myself. Grayson loaned me some tools, roughed out a block of cedar for me, and sent me on my way. On a Saturday afternoon I tried making a mallard, and I amazed myself at limitless ways in which a pair of clumsy hands can mangle a perfectly good piece of cedar. My respect for Grayson's skill increased substantially with each mistake.

I'm still determined to make my own rig of decoys, and as soon as my cut fingers heal, I'm going to begin again the first of a dozen mallards.

*A completed set of handmade mallard decoys.*

The accompanying photos and instructions are for making a working mallard drake or hen. They could just as easily be used for making black ducks, which are of similar size and shape. You can use cedar, pine, or cork, or any other clear wood that cuts smoothly and easily. The Chesser-style decoys shown here are made with very simple hand tools—knives, chisels, saw, a rasp—so you don't need a sophisticated woodworking shop to begin making decoys. The only power tool Grayson uses is a bandsaw, which he uses to rough out the blocks. You could do the same with a coping saw or jig saw, or you could trace the pattern on the block and have it cut by a woodworking friend or by a cabinet shop. The only other power tool you will need will be a drill or drill press in case you decide to hollow out your decoys.

The first part of this article will show you how to cut out and carve the body and head. In the second part, we'll show you how to paint the decoy you've created.

## Carving a Mallard

Here's what you'll need:

- *Two pieces of white cedar or similar wood at least 2x8x14 inches*
- *A piece of similar stock at least two-and-one-half inches thick and large enough to make the head*
- *Several quarter-inch galvanized lag screws 2 to 3 inches long*
- *6-8 4d galvanized finishing nails*
- *Waterproof wood glue*
- *Wood filler such as Plastic Wood*
- *Sandpaper*
- *Glass eyes in brown or black, 9 or 10 mm, with metal mounting stems. You can get them at hobby shops, taxidermy supply stores, or carving supply stores.*
- *A drawknife, spokeshave, and Surform wood rasp. The rasp alone will do the job, but the other two will get the job done much faster.*
- *A saw and chisel*

Begin by using two lag screws to fasten the two 8x14 pieces of wood together. Don't glue them, because later you will separate the halves to mount the head and to perhaps hollow out the decoy. More on this later.

Use the pattern to draw the top and side body outline (illustration 1), and the head. Cut out the pattern on a bandsaw (2), or have it done in a woodworking shop. Grayson wears a Dustmaster air cleaner, which filters out airborne dust and provides eye protection. You should take similar precautions.

After the head profile is cut, draw a centerline and roughly outline the head and bill (3). Cut on the bandsaw. If your saw has a tilting table, you can use it to round the edges of both the head and body, thus saving time with the knife.

Carve the head first. Place the bill in a vise and use the spokeshave, drawknife, or rasp to round the top and back of the head (4). Do the neck next, then draw a "Y" under the bill and cut out as shown and carve the nail of the bill (5).

Next, cut an eyeline groove to form the contour between the cheek and head. To do this, draw a line above the cheek on both sides of the head, and cut a groove along the lines.

Now draw the separation between the bill and head and cut out (6). Mark the separation between upper and lower mandibles and cut a groove along that line. Mark the nostrils and cut an indentation for each.

Now you're ready to sand the head

**Illustration (1):** *Use the pattern reproduced on this page and the preceding one to cut out your decoy.*

**Illustration (2):** *Cut out the pattern on a bandsaw.*

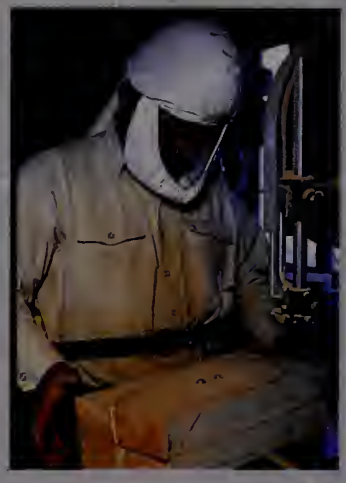


**Illustration (3):** *Roughly outline the head and bill and cut on a bandsaw.*

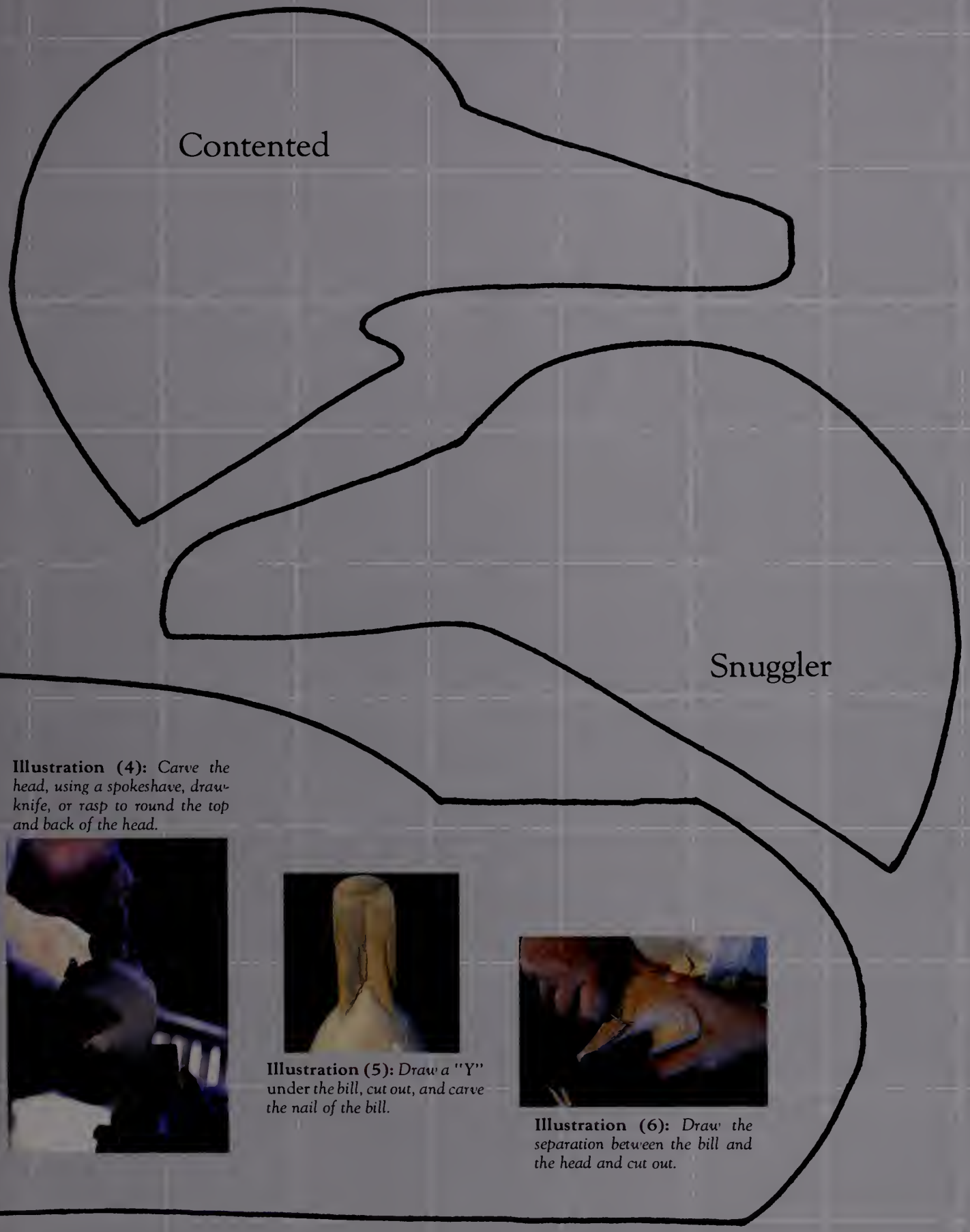



**Illustration (4):** *Carve the head, using a spokeshave, drawknife, or rasp to round the top and back of the head.*

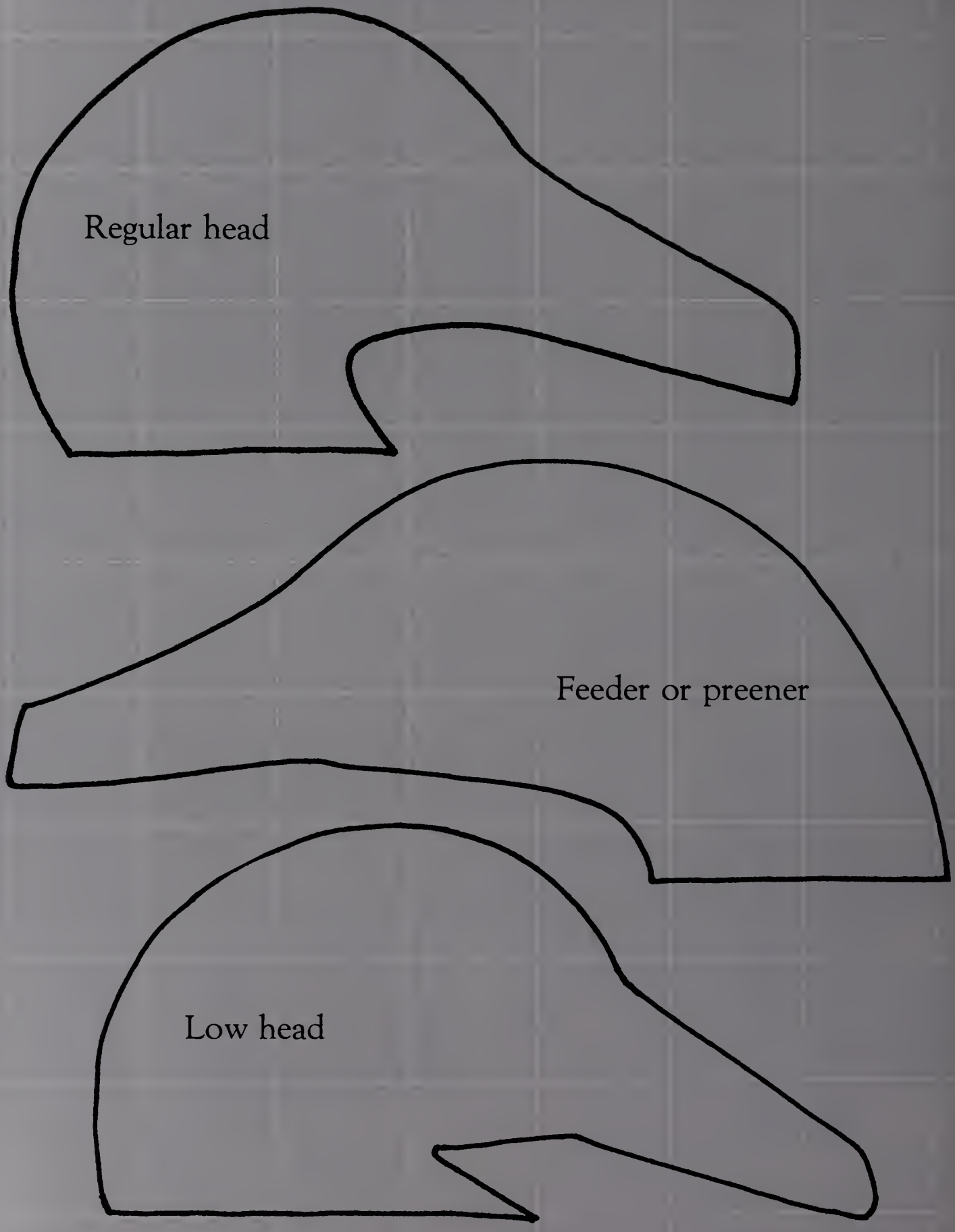




**Illustration (5):** *Draw a "Y" under the bill, cut out, and carve the nail of the bill.*



**Illustration (6):** *Draw the separation between the bill and the head and cut out.*


Regular head
Feeder or preener
Low head

and locate and insert the eyes. Use medium and fine sandpaper to round all edges and remove rough spots. Use a pencil or pen to mark the eye location along the eyeline groove. Be sure you don't get the eyes too low or too far back, and be certain that the location is correct before you begin cutting. Draw the eyes and look at the head from the top and front to insure that the eyes are in alignment.

Use a sharp knife with a small blade to cut the indentation for the eye (7), making it slightly larger than the diameter of the glass eye. Press the blade of the knife into the eye socket several times to soften the wood and make it easier to insert the metal mounting stem of the eye. Next, fill the eye socket with wood filler and cut all but about 3/8" of the metal stem off the eye. Press the glass eye into place, and wipe away excess filler with your finger. Your head should now look like this (8).

Now you're ready to carve the body. First, place the head on the body and use a pencil or pen to mark the position (9). This is an important step because the head position will greatly determine the attitude and personality of your decoy. You can turn the head to the side, angle it downward, or have it thrust forward slightly, as if the bird were feeding. You can use the same pattern, but mount the head differently to achieve different attitudes. Experiment with this a little. As a rule of thumb, always angle the bill downward slightly. A low neck and lowered bill give the impression of a bird at rest. If the neck and bill are high, the bird will appear alarmed, which is not a good idea in a gunning decoy.

To make carving easier, use your lag screws and a piece of scrap wood to attach a keel to the body (10). The keel allows you to use a vise to hold the body as you carve it; it will be removed later.

Use a drawknife, spokeshave, or rasp to round off the body, then use a large, sharp chisel to define the lower neck and breast area. What you're doing here is creating a shelf on which the neck and head will sit.

Use a pencil or pen to mark where the primaries lay over the tail, and cut along this line with a small saw. Use the chisel to carve the separation between the primaries and the tail, and under the tail.

**Illustration (7):** *Cut the indentation for the eye.*

**Illustration (8):** *Press the glass eye into place.*

**Illustration (9):** *Place the head on the body and mark its position.*

**Illustration (10):** *Use lag screws and a piece of scrap wood to attach a keel to the body.*

**Illustration (11):** *The combination head and body.*

Go over the entire body with the rasp to remove any flat spots that may have been caused by the drawknife or spokeshave. Sand to remove rasp marks. Try the head for fit; the combination should now look like this (11).

Now you need to decide whether you want to hollow out your decoy. There are several advantages: First, hollow decoys are obviously lighter than solid ones. If you have to carry a rig of a dozen any distance, this advantage is apparent. Second, hollow decoys are less likely to split and check than are solid birds. Third, hollow decoys float higher on the water.

If you plan to transport your rig by boat, and if you normally hunt in open, choppy water, you might prefer solid stools. Decoys used in choppy water should be heavier, but you could add weight to your hollow stools by applying more lead ballast to the bottom, which is where the weight should be. Your hunting techniques should determine whether to go hollow or not.

If you do, remove the screws holding the two halves together and carefully hollow out both halves, preferably using a drill press with a large bit. Leave at least ½-inch of wood all around the bird, and remove no wood under the neck where the head attaches.

Drill a pilot hole through the neck and into the head, then attach the head with a lag screw, making sure that the screw goes well into the head. Use waterproof wood glue in addition to the lag screw. Use wood filler in any gaps or cracks.

Now glue the two body halves and nail them together with galvanized 4d finishing nails. Countersink the nails and fill the holes and any gaps with filler. Remove the keel and cut two pieces of scrap wood to fill the holes left by the screws. Glue the plugs into place.

When the wood filler is dry, you can give your decoy a final sanding, and you're ready to begin painting, which is what we'll do in part two of this article. □

# MAKING YOUR

*In the second part of this article, you will learn how to paint your masterpiece masterfully.*

*story & photos by Curtis Badger*

Once you've spent the past month carving and scraping and sanding, you now have a nice supply of smooth, unpainted decoys that will be the pride of your hunting rig next season. And now the challenge is to dress them up, to apply a convincing paint job and create a series of drakes and hens that will fool even the wariest of waterfowl.

The fact that you're not an artist is of no consequence. We're creating a rig of working decoys here, and the object of the lesson is to make a decoy that suggests a duck. It doesn't have to be a biologically exact replica, and the paint job we're going to give it is simple, almost a paint-by-number approach. If you mess up, just wipe off the wet paint or reapply the base coat, and start all over.

Here is what you'll need:

- *A pint each of Rustoleum flat black, flat white, and clean metal primer.*
- *Artists oils in burnt sienna, raw sienna, yellow ochre, deep blue, permanent light green, burnt umber, and raw umber.*
- *A fan brush, a soft medium-size brush, a hard brush for dry-brushing, a small brush with a good point for fine feathering.*
- *A comb. You can make your own out of metal, or you can use a portion of a plastic comb. Attaching a handle makes it easier to use.*

**Painting the Drake**

First, apply two base coats of Rustoleum flat black and allow the paint to dry completely. Then, use a pencil to draw in the side pocket feathers, the back feathers, tertials, primaries, tail, and breast feathers (Illustration 1). (If your aren't sure where these feathers are, write to the Education Division of the Game Department. We will have diagrams available to help you.)

The base color of the drake is a smoky grey that Grayson creates by mixing Rustoleum flat white with some raw umber from a tube. A little experimentation is called for here. Put a few ounces of white in a small jar and slowly add raw umber until you have a medium grey. The tube color also performs the function of slowing the drying time of the white, enabling you to comb feather detail onto the bird.

Paint only one portion at a time. Start with the rump, and paint the outlined area white. Then paint one side pocket with your grey mix, and blend these two colors together with your soft brush (2).

Now you're ready for the ancient technique of combing. (You might want to practice this on a scrap piece of wood before you try it on your decoy.) Begin at the rear of the bird and move toward the breast with slightly overlapping strokes. The comb should be kept constantly in motion and worked in a zig-zag pattern (3). You must work fairly quickly, because the combing must be done while the paint is still wet. This technique removes color to reveal the black base coat, thus creating the illusion of a feather pattern. It is considerably quicker and easier than trying to paint detail on top of the grey, and it creates a classic, herringbone

# FIRST DECOY

## Part II

**Illustration (1):** *After painting the decoy black, use a pencil to draw in the side pocket feathers, back feathers, tertials, primaries, tail and breast feathers.*

**Illustration (2):** *After painting the outlined area white, paint one side pocket with your grey mix, and blend these two colors together with your soft brush.*

**Illustration (3):** *Begin combing at the rear of the bird and move toward the breast with slightly overlapping strokes in a zig-zag pattern.*

**Illustration (4):** *Paint the tertials with burnt umber and comb the tertials toward the breast.*

**Illustration (5):** *The speculum is bordered on each side by a strip of black, then white.*

**Illustration (6):** *Paint the breast with two coats of burnt sienna.*

effect that is very attractive.

Divide the back lengthwise into halves, and apply grey paint to the center section of the back adjoining the side you just combed. Outline this area with burnt umber and use your soft brush to blend the edges of the burnt umber with the grey. Paint the tertials with burnt umber and comb the tertials forward toward the breast (4).

Repeat the process on the other side of the back, then do the remaining side. Pivot the bird on your knee as you work, so the area you have painted moves away from you.

The base color for the head is Rustoleum flat black, with a little deep blue tube paint added to produce a colder tone. When this coat is almost dry, apply permanent light green to the cheeks and blend into the area with a soft brush or fan brush.

When the back and sides are dry, outline individual feathers on the back with light grey in some areas and burnt umber in others.

Paint the speculum with the deep blue artists oil, adding a touch of white to make it dry hard. The speculum is bordered on each side by a strip of black, then white (5).

The bill is then painted with Rustoleum clean metal primer mixed with a little flat black. Paint the nostrils and the nail flat black. The collar is painted flat white.

Paint the breast with two coats of burnt sienna (6), allowing at least 24 hours between coats for the paint to dry.

Now all you have to do is add a weight to your decoy, a loop for an anchor line, and you're ready to go hunting.

**Illustration (1):** *Use a soft pencil to mark the feather patterns and individual feathers on the back.*

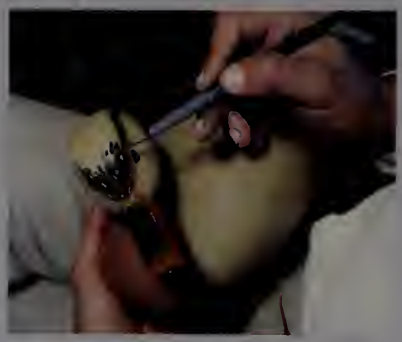


**Illustration (2):** *Paint the bill with raw sienna, mottling it with dabs of flat black. Mix flat black and raw umber to paint the feathering on the head.*

**Illustration (3):** *Paint a feathered line through the eye to the top of the bill.*

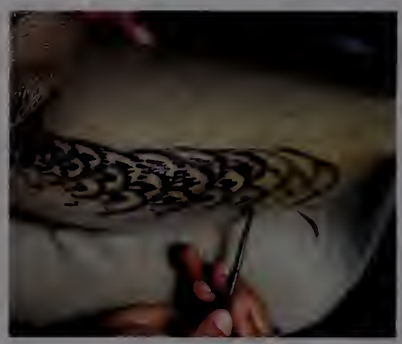


**Illustration (4):** *Use a dry brush to paint the side pocket feathers, and a fine brush to outline the feathers, while painting the darker sections of each feather with the same color.*

**Illustration (5):** *Paint each feather on the back, leaving the edge of the base coat showing and paint the primaries with a thin coat of the same color.*

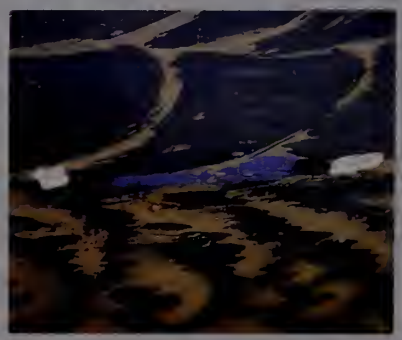


**Illustration (6):** *Paint the speculum and the tail exactly as you painted them on the drake.*

## Painting the Mallard Hen

The base coat for the hen is Rustoleum flat white, with some yellow orchre and burnt umber added. Again, experiment to get the desired color, using the accompanying photographs as a guide. Transfer a few ounces of white to a jar, and add yellow ochre and burnt umber very slowly. Be careful not to overdo the burnt umber, or the base coat will be too dark.

After applying the base coat, blend some burnt sienna into the breast area to give it a slight reddish cast.

When the base coat is dry, use a soft pencil to mark the feather patterns and the individual feathers on the back as shown (Illustration 1).

Paint the bill with raw sienna, and mottle it with dabs of flat black along the center and on the nail. The feathering on the top of the head is done with raw umber and flat black mixed one-to-one (2).

Use single brush strokes on the head, angled toward the back and center. Use heavier strokes close together on the top of the head. On the cheeks and neck the strokes are finer and farther apart. The throat area gets no feather markings. Paint a line through the eye to the top of the bill (3).

The breast and side pocket feathers go on next. Use a small, soft brush with a good point to paint the breast feathers. Use a dry, hard brush with just a little color to do the side pockets. You are still using your flat black-burnt umber combination. To paint the breast feathers, use the small brush and begin near the neck with tiny V-shaped feathers, increasing the size as you move downward. Outline the side pocket feathers with the same technique.

Use the dry brush to paint the side pocket feathers, then use the fine brush to outline these feathers in a random manner (4). Paint in the darker sec-

tions of each feather with the same color.

Paint each feather on the back, leaving the edge of the base coat showing.

Paint the primaries with a thin coat of the same color (5), and paint the feather markings between the tertials and the primaries. Outline the primaries with flat black.

Paint the speculum and the tail the same as you did the drake (6).

Add a few black marks on the top of the head after the previous coat dries. This gives the feathering the illusion of depth.

You now have a mallard pair ready to add to your hunting rig.

*Weight with a line loop, and brand your name on bottom of decoy.*

*Anchor with thick copper wire bent into a U-shape, made in a muffin tin.*

## Weights and Line Loops

To make your decoys self-right and float realistically, you must add weight to the bottom. The best way to make weights is to melt lead and pour it in a muffin tin to a depth of about one-quarter inch. Grayson uses a plumbers lead pot, but you could do the same thing over a charcoal grill or any source of intense heat. Do it outdoors, or in a well-ventilated area, not on the kitchen stove.

While you're making decoy weights, you can make anchor weights at the same time. Use thick copper wire bent in a U-shape, and place the two ends in the molten lead in the muffin tin. Use pliers to bend the ends of the wire to make the joint secure. The lead will harden in just a few seconds.

When your decoy weights have cooled, drill a hole in the center of the weight and use a brass wood screw of the proper size to attach it to the decoy. But before you attach the weight permanently, you must first locate it in the proper position. To do this, fill up your bathtub, attach the weight to your decoy with a rubber band, and see how it floats. The weight might not necessarily go in the center of the decoy. Depending upon variations in wood density, the manner in which you hollowed your decoy, and the position of the head, the weight might have to be offset somewhat to make the decoy float properly. Move the weight from side to side, and forward and aft, until the decoy floats like the real thing. Mark the position of the weight, then attach it with the brass screw.

Now you need to attach a loop to the bottom front of your decoy for the anchor line. There are a number of ways to do this. Probably the best is to use a leather loop and secure it with two small brass screws. You could use an eye screw, but these tend to work loose after much handling and hard use, and you wouldn't want to see your masterpiece floating away with the tide. Most of the old-time decoy-makers used the leather loop, and they weren't often wrong.

The only other step is a purely optional one. After all your hard work, you will probably want to personalize your decoy with your name or initials painted or carved on the bottom. You should probably opt for carving, because paint tends to wear off or disappear under subsequent coats when your decoy is refurbished in future seasons.

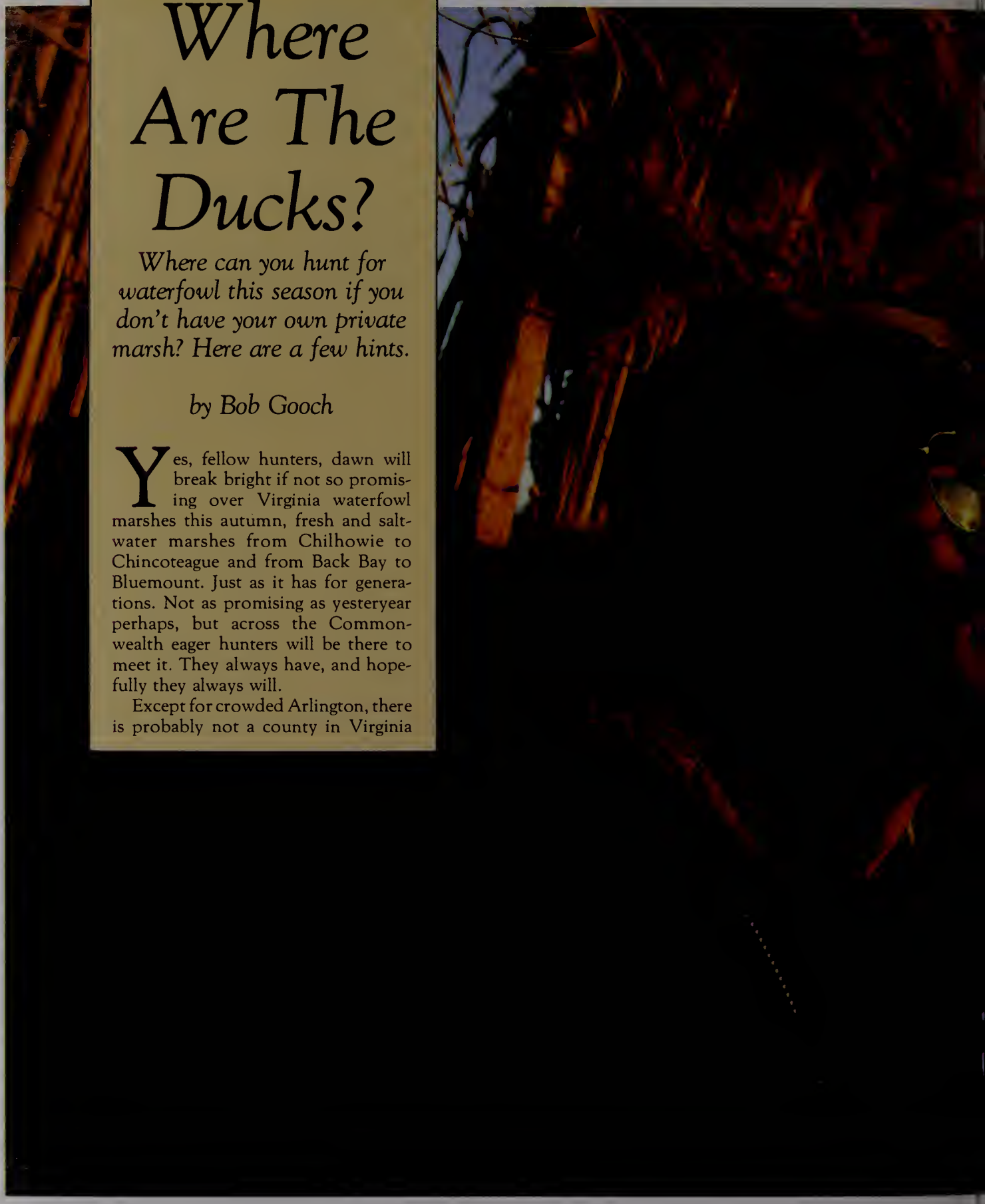
Now aren't you proud of yourself? You've created a personalized and functional hunting tool that can't be matched by anything you can find in a sporting goods store. And even if your first efforts don't produce masterpieces of wildfowl art, you are off to a good start. With a little practice, your techniques will become more finely tuned, and you might find that decoy-making is not only a means of extending the hunting experience, but an avenue of self-expression as well. □

*Curtis Badger is director of publications for the Wildlife Art Museum of the Ward Foundation in Maryland.*

# Where Are The Ducks?

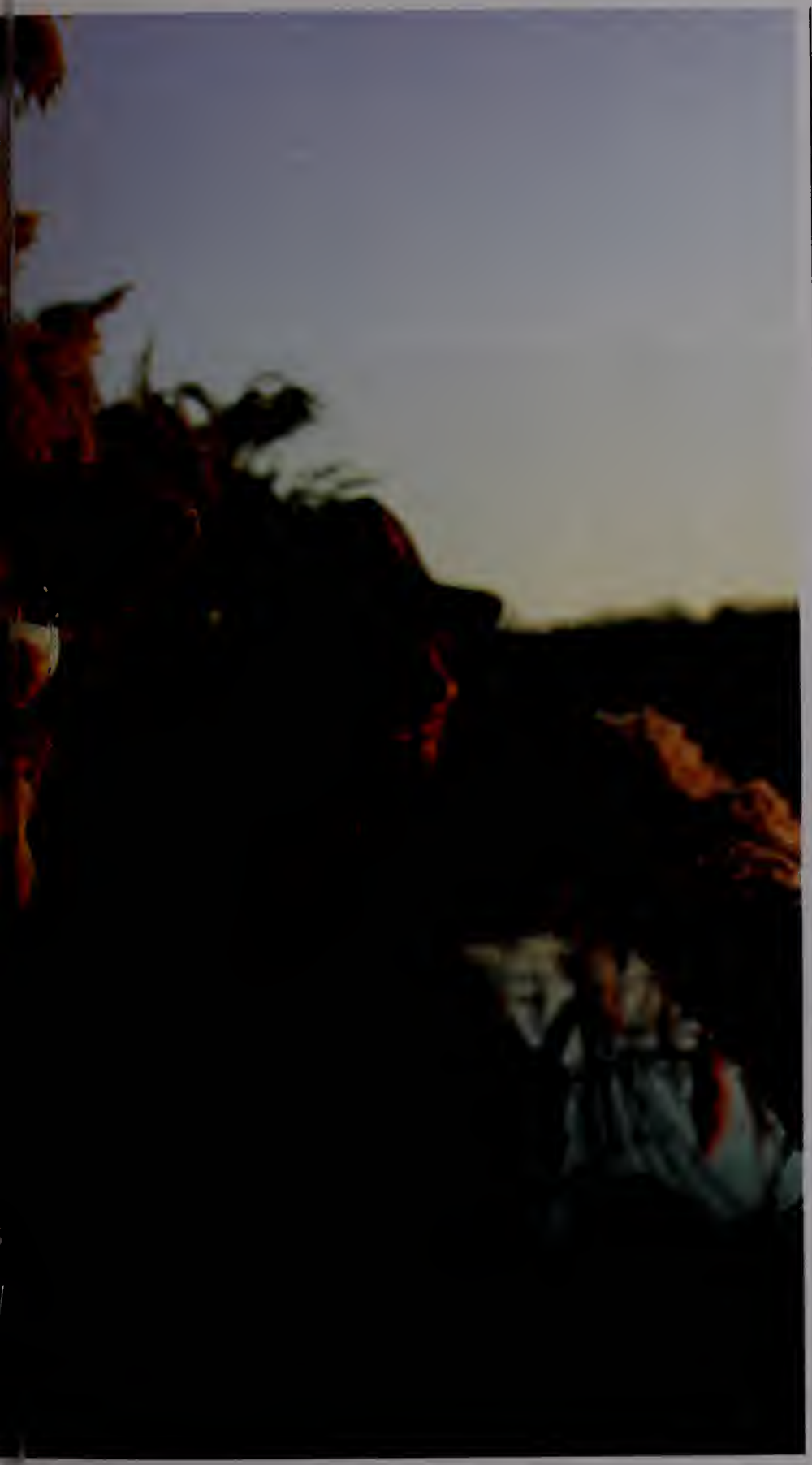
*Where can you hunt for waterfowl this season if you don't have your own private marsh? Here are a few hints.*

*by Bob Gooch*



Yes, fellow hunters, dawn will break bright if not so promising over Virginia waterfowl marshes this autumn, fresh and saltwater marshes from Chilhowie to Chincoteague and from Back Bay to Bluemount. Just as it has for generations. Not as promising as yesteryear perhaps, but across the Commonwealth eager hunters will be there to meet it. They always have, and hopefully they always will.

Except for crowded Arlington, there is probably not a county in Virginia



that doesn't offer some waterfowling.

But where do you find these ducks and geese that have helped build the Virginia hunting tradition? Do you have to join an expensive duck club? It's a question that bugs many would-be waterfowlers. A simple answer is an emphatic no. A more informative one is more complicated.

But let's try.

Over the years, the Department of Game and Inland Fisheries has acquired for the public's use some of the best waterfowl marshes in Virginia. "Hunters do as well in our marshes as they do anywhere," retired executive director of the Game Department, Dick Cross once said. Strategically located in the prime coastal waterfowl country, these marshes offer shooting for a great variety of birds that funnel down the Atlantic Flyway every fall. Hunting success, unfortunately, is related directly to the success of the Canadian breeding season, and admittedly, the U.S. Fish and Wildlife Service biologists don't forsee much improvement over last year's so-so season. Virginia duck hunting should be much the same. The populations in the Atlantic Flyway are at least as strong as last year, but the Canada goose numbers could be down.

Game Department wildlife management areas open to hunting in the vast tidal country of Virginia include Mockhorn Island and Saxis on the Eastern Shore, and Ragged Island on the James River.

Mockhorn Island, just off the coast in Northampton County, offers such varied species as black ducks, brant, bufflehead, goldeneyes, oldsquaws, and scoters, and is an area reached by boat from Oyster.

The Saxis Wildlife Management Area is on the Chesapeake Bay in Accomack County. Black ducks nest and winter there, and Canada goose hunting can be good. Other puddle ducks include mallards, pintails, teal, and widgeon. Nearby open water attracts buffleheads, goldeneyes, redheads, scaup, and mergansers. There are public launching ramps on Messongo Creek and at Dicks Point.

*Chickahominy River duck blind; photo by Lynda Richardson.*

Ragged Island Wildlife Management Area rests at the southern end of the James River Bridge in Isle of Wight County. Species include black ducks, gadwall, mallards, ruddy ducks, and scaup. Unimproved boat launching sites facilitate jump shooting along the creeks.

While there is no charge for hunting these areas, a Virginia hunting license and a federal waterfowl stamp are required. Hunters are on their own, furnishing their own boats, decoys and other equipment. A canoe is ideal for Ragged Island. Permanent blinds are prohibited, but many hunters rig camouflage nets or build temporary blinds.

Over the years, Barbours Hill, Pocahontas, and Trojan on Back Bay in Virginia Beach and Hog Island on the James River in Surry County, all fee-hunting areas, have been the most popular wildlife management areas for waterfowlers. Collectively, they offer hunting for just about every species of waterfowl found in Virginia. Hog Island is noted for its Canada goose, and Barbours Hill is probably the best for snow geese. All host a rich variety of ducks.

Except for Trojan, hunters are assigned blinds on the basis of a drawing held by the Department in early October. Applications are available from its Richmond office in September and must be submitted by October 10 this year along with a $15 fee. Trojan blinds are assigned on a first-come, first-served basis each day.

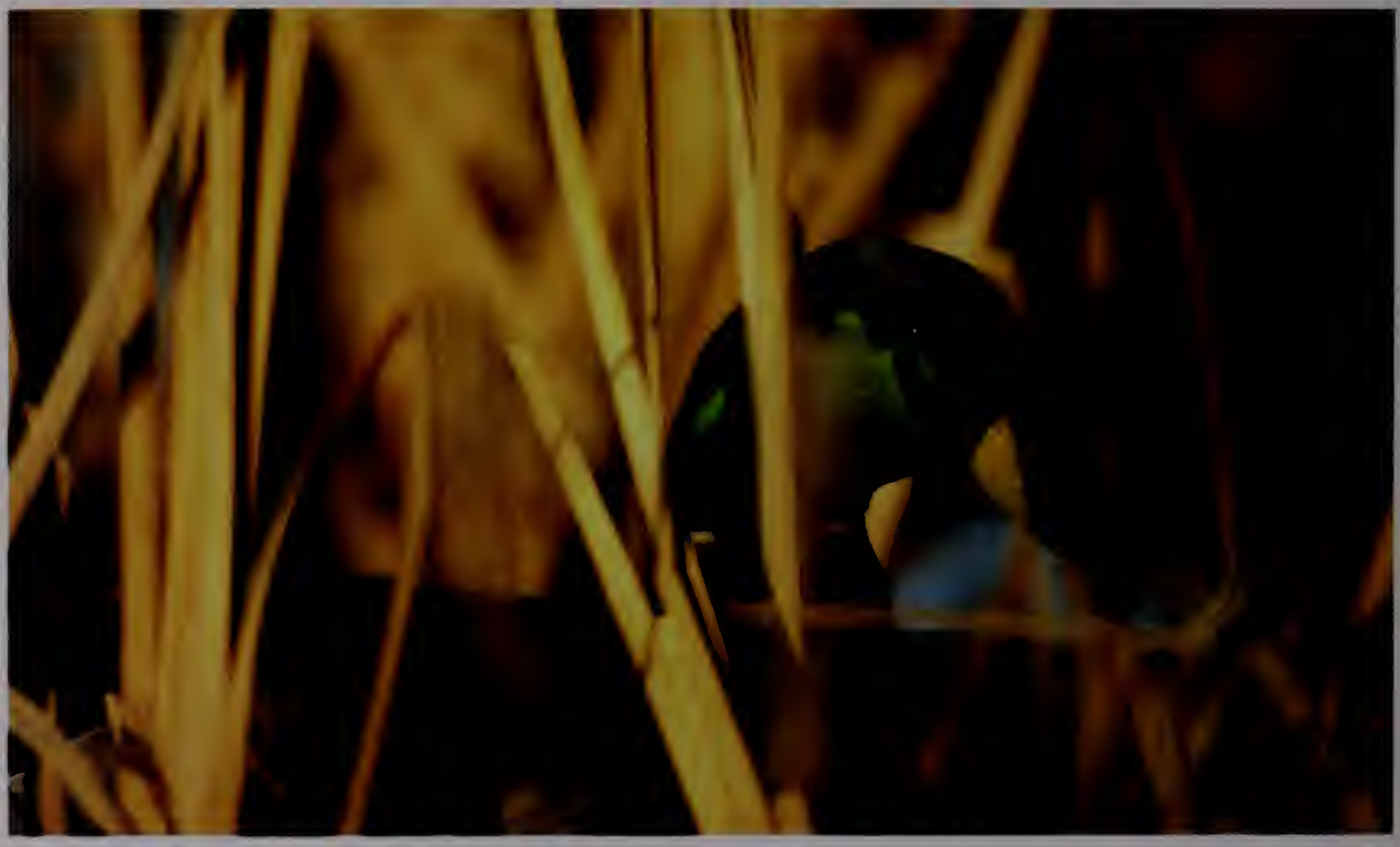
While hunters must furnish their own boats and decoys for the Pocahontas and Trojan hunting, they are furnished by the Department at Barbours Hill and Hog Island.

Those unlucky in the drawing can check for cancellations during the course of the season. A call to 804/426-6320 for Barbours Hill and Pocahontas and 804/357-5224 for Hog Island will uncover cancellations. Chances are probably higher at Barbours Hill and Pocahontas than they are at Hog Island.

Before we leave the waterfowl-rich Tidewater region, however, let's not forget the 13 barrier islands owned by The Nature Conservancy. Waterfowl hunting is allowed in the intertidal marshes between the islands and the mainland. Free hunting permits are available from the Virginia Coast Reserve of The Nature Conservancy, Brownsville, Nassawadox, Virginia 23413, telephone 804/442-3049.

Some of the best hunting in recent seasons, however, has been on the inland rivers, far from the traditional waterfowl marshes. Black ducks, mallards, and wood ducks breed locally, and winter on these rivers, thus, the quality of the hunting is not tied to the Canadian breeding grounds.

These streams ribbon the state. They include the larger ones such as the Dan, James, Mattaponi, New, Pamunkey, Rappahannock, Roanoke, and Shenandoah, and the smaller ones like the Appomattox, Blackwater, Chickahominy, Jackson, Rapidan, and Rivanna. Some of the best hunting may be found on the smaller streams that flow through woodland valleys. Only the public waterways, however, are



*There are mallards hiding out in public waterways all over the state. You just have to know where to find them: photo by Kevin D. Shank.*

open to hunting without the permission of the landowners. The Department's system of boat launching ramps provides easy access to many of the public waterways. East of I-95, however, there are shooting restrictions applied to the jump shooter. *Be sure* to check with the local game warden before hunting the area.

Experienced waterfowlers float these streams in canoes or light boats, dress in camouflage, hug the banks and inside curves, and move quietly. A far cry from shooting over decoys from a comfortable blind, it's a challenging sport.

*"Lakes and ponds of all sizes attract ducks, but the shallow areas, are usually the most productive."*

Blinds and decoys, however, can be productive on the larger lakes. Good ones are scattered east to west and north to south. Lakes Anna, Buggs Island, Claytor, Gaston, and Smith Mountain all offer waterfowl hunting. Many hunters build permanent blinds, but others hunt from camouflaged boats concealed in shoreline vegetation. The legal status of floating or stationary blinds, however, varies on different bodies of water. Be sure to check with your local game warden regarding county ordinances and state regulations.

Lakes and ponds of all sizes attract ducks, but the shallow ones, or those with shallow areas, are usually the most productive. Hunting, however, is prohibited on most Department fishing lakes, an exception being Briery Creek Lake in Prince Edward County.

The busy and ubiquitous beaver has become one of the duck hunter's best friends. Beaver ponds, or beaver flowages, particularly woodland ones, can furnish some good waterfowling for woodies. Such hunting is found all over Virginia, and it is the basis for my statement that there is waterfowl hunting in just about every county. Booklets, charts, and maps seldom show beaver ponds. Hunters scout them out. That in itself is fun. Locate a tiny stream and follow it—upstream or down. Which direction appears most promising? Be sure to obtain written permission to follow that stream onto private land, though.

Beaver ponds, small streams, and other such waters seldom support volume shooting. Often it is just a matter of being there at dawn, bagging a bird or two, and moving on. Rarely does a hunter spend all day at a beaver pond as he would in a Back Bay blind, but the rewards are high. Few ducks make a more handsome mount or are as tasty on the table as the wood duck.

Yes, there are plenty of waterfowling opportunities on the public lands and waters of the Old Dominion. A complete inventory will turn up many more than the average hunter can possibly take advantage of. Most eventually become selective.

The high interest in waterfowling and the abundance of opportunities over the years has produced some crack hunting guides. For many hunters, a guide could be the least expensive route to go. It depends mostly upon how often a hunter gets out. A good guide knows his territory, the game, and often has access to otherwise unavailable marshes or waters. He has blinds, boats, decoys, retrievers, and is expert with a great variety of waterfowl calls. Add up the costs, throw in your time, and the economy of securing the services of a good guide becomes obvious.

Waterfowl guides are concentrated mostly along the coast, primarily in the Chincoteague area of the Eastern Shore and at Back Bay in Virginia Beach. There is no licensing requirement for guides in Virginia and just who is and who isn't guiding can be a puzzle. Here, however, are a few with proven records.

Long seasons and more liberal bag limits make the Eastern Shore a popular goose hunting area. There is also good duck hunting in the Chincoteague region, though the Chincoteague National Wildlife Refuge is off limits to hunting. Guides there include C.L. Marshall 804/824-6172, Carlton McGee 804/336-5236, and Jimmy Bowden 804/336-6082.

Despite its problems in recent years, waterfowling in the Back Bay region is legendary. So have been many of the guides who have operated there. Contemporary ones include Jim Clark 804/426-5393, Dean Davis 804/426-2061, and James Freeman 919/429-3105.

Inland, there is Ray Shepherd 804/462-7149 who guides on the Rappahannock River and Piedmont Guides and Gunners 703/967-0810 who offer field shooting for Canada geese in Louisa County.

No, you don't have to join an expensive duck club to enjoy waterfowl hunting in Virginia. Engaging a guide may be the easiest and surest way, but scouting for some good hunting and doing your own thing can be just as rewarding. Fortunately, you can go either route in Virginia. Ducks are seldom far away. □

*Note: Before you go, make sure you carry along a copy of the latest waterfowl regulations, available from the Game Department free by writing: Game Department, Education Division, P.O. Box 11104, Richmond, VA 23230-1104. And carry a box of steel shot. You might as well find out now how good that stuff is, even if you're not hunting on one of the 11 areas that requires it.*

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*Bob Gooch lives and works in Troy, Virginia. A member of the Virginia Outdoor Writers Association and Outdoor Writers Association of America, Bob is a regular contributor to major outdoor publications.*

# Elm Hill Wildlife Management Area

**Location:** Elm Hill WMA lies on the north bank of the Roanoke River, in Mecklenburg County, below John H. Kerr Dam. It is conveniently bordered along its west boundary by State Route 4 and on the north by Secondary Highway 615. It is approximately 16 miles southwest of South Hill.

**Description:** The 1,372-acre area consists of about 1,000 acres of open, farm-type upland, 100 acres of woodland, and the remainder wetland and water. Two small creeks drain the area and larger Allen Creek flows through and along its eastern border to the Roanoke River. Terrain is typical gently rolling Piedmont. Much of Elm Hill once was a cattle farm and relics of that operation remain. It was acquired as a Wildlife Management Area for its dove and small upland game potential. Current upland management practices encourage native vegetation, and include cultivation of agricultural crops, for use as food and cover by small game and other wildlife. Ponds and wetlands on the area are controlled and managed as resting, feeding and breeding habitat for waterfowl. Elm Hill serves as a winter waterfowl refuge.

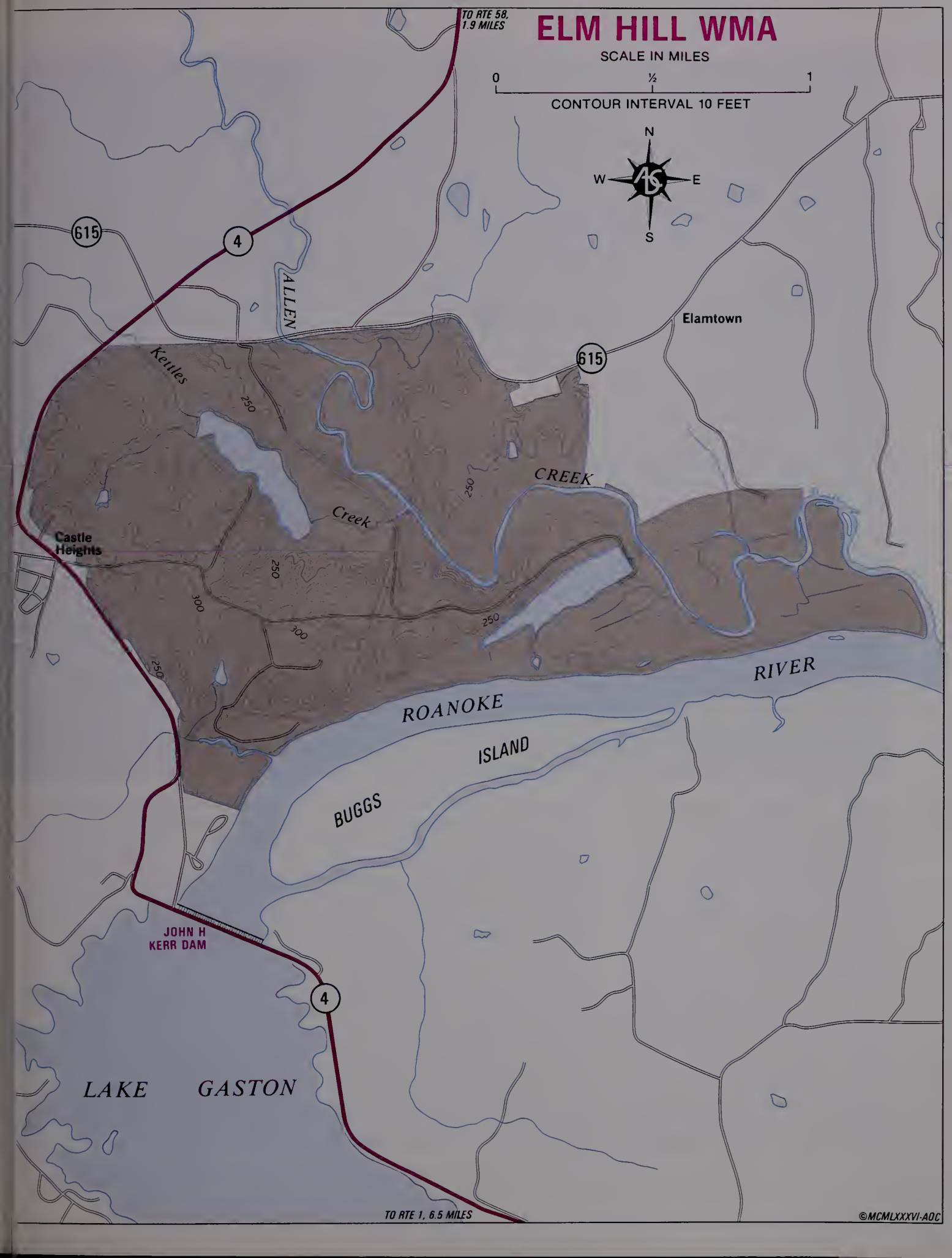
Modified farming techniques are employed, with limited use of agricultural chemicals and major emphasis on mechanical methods to foster native vegetation essential for productive small game populations. Extensive annual dove and quail food plantings are a major element in the comprehensive land management program.

**Hunting:** Elm Hill has been managed for dove hunting since the first parcel was acquired in 1963, and some excellent dove harvests have been recorded. Hunting pressure is heavy early in the season. Birds remaining after the first few weeks tend to disperse and are not seen in the concentrations that occur earlier. The area is among the favorites for field trials. Pointing dog, retriever and foxhound trials are run mostly before opening of non-migratory game hunting seasons in the fall, to minimize their conflict with hunting. Quail and rabbit populations are good, but as with doves, hunting pressure is heavy. Squirrel habitat is limited by the relatively small amount of woodland on the area. Presently, waterfowl may not be hunted at Elm Hill which serves as a resting and feeding area for ducks and geese that range out over and around nearby waters of Gaston and Kerr Reservoirs.

**Special Regulations:** Waterfowl may not be hunted at any time. Doves may be hunted during prescribed annual seasons on Wednesdays and Saturdays only. Otherwise, except as may be conspicuously posted on the area from time to time, seasons, bag limits, and general regulations are the same as those applicable to the rest of Mecklenburg County. Strung bows, and firearms not unloaded and cased, are prohibited except during authorized hunting seasons. Off-road driving of motor vehicles, driving around secured gates, and parking so as to hinder passage of authorized vehicles, is prohibited.

**Fishing:** Some of the best freshwater fishing in the state for largemouth and striped bass, crappie and other warm water species is to be had in nearby Gaston and Kerr Reservoirs and the streams that feed them.

**Points of Interest:** Terrain is fine for horseback riding, walking, and bird (especially waterfowl) watching. Field trials attract many participants and observers. An Army Corps of Engineers public camping area (Rudds Creek) and a state park (Occoneechee) are only minutes away by auto. □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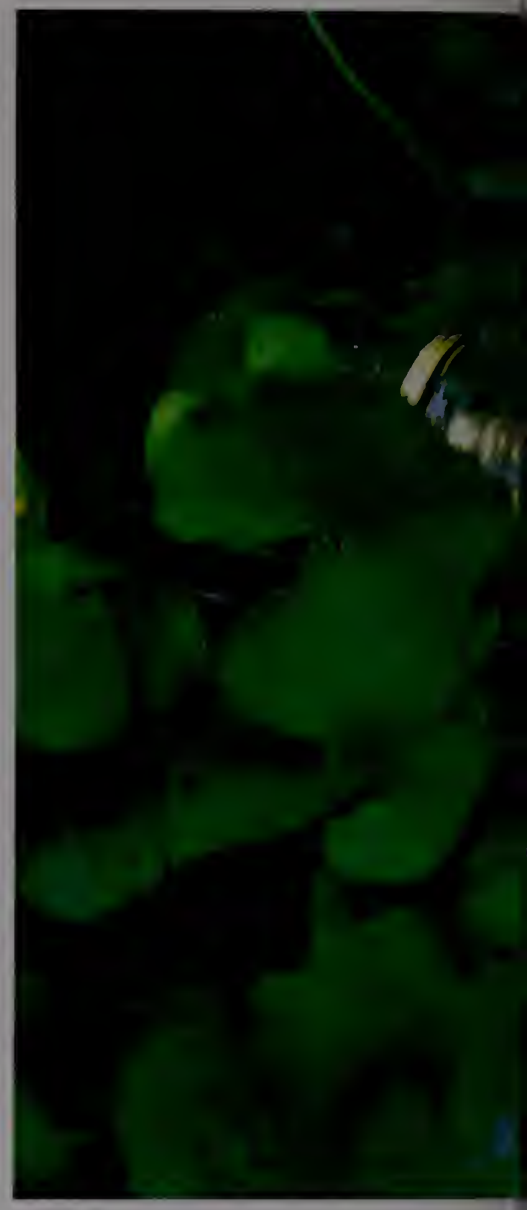
# A Deadly Trap



*The careless toss of an empty soft drink bottle sets a deadly trap for countless small mammals in Virginia.*

*by John Pagels*
*photos by Lynda Richardson*

As a member of my university's Institutional Animal Care and Use Committee (IACUC) I spent last night reading approximately 40 forms filled out by researchers explaining how the vertebrate animals used in their studies would be properly cared for, bedded, fed, anesthetized, given postoperative care and if necessary, euthanized in the proper fashion. One of the 15-page-long forms, or IACUC protocols as we call them, that we reviewed at our monthly meeting today came from an ole "mouse trapper"—me. Nesting boxes and live traps are used in my work with the Department of Game and Inland Fisheries on the endangered Northern flying squirrel. As part of the federally mandated procedure, I had to assure other IACUC members that not only flying squirrels but other kinds of mammals that I caught would be properly cared for. For example, the traps would be checked regularly and appropriate bedding and food would be available in the traps. Generally, there's a lot of good for having such assurances filed, not only for the animal but also for the researcher who hopes to stay in the business.

It's been many years since there were no rules to protect the animals and ultimately the trapper—or is it the opposite? I think back to when my dad got me my first half dozen traps for running a short line for muskrats. Our trapping laws required that name tags be attached to the chains on the traps so that the authorities knew who was trapping where, when and how. I was an especially proud eight-year-old when my own copper name tags arrived. Of course my name wasn't too visible after we had boiled the traps in black walnut husks and dipped them in beeswax. But boy, I knew it was there. In the 36 years since then I've used about every kind of trap made, some like luxury mini-condominiums for mice and others not so good. But all were approved by others. I always had some sort of license or permit.

Ironically, a trap that's not even a trap, the discarded bottle, catches more small mammals than all other forms of trapping combined, yet this "trap" is

completely unregulated. There is no season on setting them, nor any license required. And, the specimens are totally wasted—almost.

I'll never forget my first exposure to the phenomenon of bottle entrapment. I was in the first year of my study on the shrews of Virginia, a project sponsored by the Virginia Department of Game and Inland Fisheries' Nongame Wildlife and Endangered Species Program. There are nine species of shrews in Virginia, some of which are known to be in trouble, and virtually nothing was known about others. My primary task was to determine their distribution.

But that's another story. The only effective way to sample shrews is to use pitfall traps: cans are buried with their tops open at the surface and shrews simply fall into them. I was along I-66 near Front Royal and my hands were freezing as I smoothed the January soil around the pitfall; one of more than 1,500 that I would place that year. Glancing around I noticed an old soft drink bottle—bells started to ring—what had somebody told me about bottles and shrews?

There appeared to be something in the bottle, and as I shook the contents into my hand, a skull and various remains of a Northern short-tailed shrew fell out. Before I left the spot I had six other skulls, representing two species. All were in discarded beer and soft drink bottles. Later, I remember that the year before a colleague, Dr. Tom French, now with the Massachusett's Department of Natural Resources, and also a student of shrews, had told me that when I'm doing my work I should check discarded bottles; that he had found many interesting records that way. Actually, entrapment of small mammals in bottles had been reported in Europe, but knowledge of the phenomenon seemed to be negligible in the U.S.

Entrapment isn't limited to soft drink and beer bottles, but such bottles make up a large proportion of the bottles. I once found five skulls in a ketchup bottle along a headwater stream at 4,000 feet in the mountains, but, in general, ketchup seems to pose little threat to small mammals. I haven't

found many mammals remains in liquor bottles, either. For one, they aren't as common on the roadside by comparison, but more interestingly, most people put the tops back on the liquor bottles before they pitch them. Plus, they're often very localized, as in the last turn in a road before you get to a house.

Small mammals probably enter the bottles in response to exploratory drives. Shrews, in particular, have very high metabolic rates, and except for occasional rest periods, are active throughout the 24-hour cycle in search of food. In their much busier than a beaver way of life, to a shrew or mouse, the opening to a bottle buried in the vegetation is probably like a portal to a meal, or at least looks or feels like an avenue to get to a better spot. Entrapment apparently results from differential abilities of small mammals to enter and exit through the neck of the bottle. Once inside the bottle, the footing is no longer any good and the animal's fur might become wet and sticky from condensed moisture or rainwater in the bottle. The tiny mammals presumably starve to death while trying to get back out of the bottle—like treading on a wheel that leads to nowhere.

Although there is often moisture in the bottle, I doubt that the animals are attracted by beer or soda that might remain in the bottles. Not because the mice wouldn't care for a little sip, but because most of the bottles that do the entrapping have been there quite awhile—they're way down in the vegetation with their openings at ground level. Yes, the very bottles that are out of sight and out of mind. That is, until there has been a grass fire and they're exposed like boulders in the James River during a severe drought.

The bottles that are the most successful are those that are on a slight slope with the openings directed upward. Of course, that's no problem anywhere in the state; almost always there is a roadside ditch, or a bank that's sloping up or down. And discarded bottles aren't limited to roadsides—ponds, lakes and even our finest trout streams have more than their share, although the numbers don't seem to be as great when the water is high. Small mammals won't be caught

*Small mammals meet their deaths in discarded bottles because, although they can easily crawl into a bottle, they can't crawl out.*

in submerged bottles, but on the shores of the Bay I've found many bottles washed up that contained dead baby crabs and other invertebrates.

In addition to the six species of shrews that I found in bottles in Virginia, I also found eight species of rodents, including deer mice, white-footed mice and golden mice. Because most mice are good climbers, the bottles don't have to be flat on the ground. On one hot day I found three "fresh" but very bloated golden mice in a 16-ounce bottle that was sitting upright in a roadside honeysuckle patch.

It's not unusual to find more than one animal in a bottle, nor to find more than one species in a single bottle. I've on several occasions found two species of shrews and a mouse in a single bottle but the record for a single bottle was 17 Southern short-tailed shrews in a 10-ounce soft drink bottle. Certainly, these had to have perished over a relatively long period of time, and decomposed to make room for so many.

The number of bottles along roadsides and the number of animals that perish in them are great. In about 60 counts made along measured segments of roadside in various Virginia counties, my family and I found an average of about 1,000 bottles (166 six packs!) per mile. Or, if these estimates are correct, there are more than 40 million bottles along Virginia's secondary roads. These same counts revealed there are from 40 to 100 small mammals in such bottles per mile of roadside. The counts are higher in winter when the bottles that act best as traps, those deep in the ground cover, are more visible. During the spring and summer bottle surveys, many of the bottles are found only by stepping on them—many of those like the aforementioned bottles that are exposed by fire. Whatever the case, there are anywhere from about 2 million to almost 5 million dead mammals in discarded bottles along Virginia's secondary roads.

In some parts of the Commonwealth, I've been able to use bottle surveys to help answer questions about shrew distribution, hence the title of a paper by French and I that is to appear in the *American Midland Naturalist* this fall entitled "Discarded Bottles as a Source of Mammal Distribution Data." An example: there are two closely related species of shrews, the Northern and Southern short-tailed shrew whose ranges touch in various parts of southern and eastern Virginia, but their ranges don't overlap. After years of conventional sampling that included a master's thesis on the subject, there were still many gaps in the data on distribution. Bottle surveys promptly filled in many of the gaps. In a two-day period in southeastern Virginia, bottles at 20 localities yielded 86 Southern short-tailed shrews, 11 Northern short-tailed shrews, six least shrews, two Southeastern shrews and several rodents.

It is unfair to in any way suggest that the discarded bottle situation is better, or worse, in some parts of Virginia than in other parts. Or that it is any worse in Virginia than in some other states. Or that the discarded bottle is the only trash problem.

Certainly, however, many groups and localities make special efforts to clean up their environment. But my thoughts about many of these activities are bittersweet. How many times have I heard local radio stations in various parts of the Commonwealth announce that we should drive particularly carefully along a certain stretch of road on Saturday because children would be picking up litter? How many of us convince our children that they're doing science or helping the environment when they're out there carrying a plastic bag on a sunny morning? I have. But, why are the bottles there in the first place? Is littering part of our human makeup?

But, when I head for the mountains again this weekend I'll have my scientific collector's permit issued (and for a variety of good reasons) by the Game Department; I'll have my special permit that allows me to handle an endangered species, and I'll know that I have an approved IACUC protocol on file. Too, I'll feel somewhat assured that I won't run into the guy I met at a public hearing who said: "If you really want to do something about the problem, why don't you do like me and go out and pick up trash on weekends?" After all, what would I do with all the specimens? Or worse, where would I put all the bottles? Maybe I could hire a big barge and. . ! □

*The author's record for the number of small mammals trapped in a single discarded bottle is 17 Southern short-tailed shrews in a 10-ounce drink bottle.*

*John Pagels is a biologist at Virginia Commonwealth University who specializes in Virginia mammals.*

# Thumbs Up for Steel Shot

## Having field-tested steel shot for more than 10 years, Bob Gooch has come to one conclusion: steel shot *performs.*

story & photos by Bob Gooch

"Good shot!"

What hunter doesn't thrill to the ring of those words? I do, and I was brimming over with pride. Almost.

"Thanks, but I didn't lead enough."

And I hadn't. I'd tried for a head or neck shot, but my load had caught the big bird in the body, sending it careening to the black earth of the wide, flat, field that stretched back from the shimmering waters of North Carolina's Lake Mattamuskeet. A head or neck shot would have made a cleaner kill.

"Long shot," chipped in Vernon Barrington, a friend and guide. "Almost told you not to shoot," added Gregg Gibbs, the landowner and a crack waterfowler in his own right. The three of us were sharing a field blind on Gibbs's property that brisk January day.

I, too, felt I had stretched my shot a little. That bothered me, but my friends had already bagged their game, and I felt a little pressure. Both had other matters that demanded their attention. Time was a factor.

We were hunting tundra swans, a bird protected in Virginia, though reasonably abundant along the coast. North Carolina allows hunters one per season. It's a big bird. Mine was on the heavy side of 15 pounds. It was that size that bothered me. The bird probably appeared much closer than it actually was. Had it been a duck, or even a goose, I probably would have passed it up.

And then I dropped a bombshell.

"Took him with steel shot."

Silence, stone silence. No response. No comment.

"Why?" was the obvious, but unasked, question. After all this was North Carolina in early 1987. Steel shot wasn't required as yet. Why would any hunter shoot it?

"Had a good supply of Magnum No. 2's on hand," I added, feeling that amplification was needed. "I've enjoyed good success with them on geese, so I didn't bother to buy new ammunition."

We didn't pursue the subject further. The talk switched to other matters as we turned to cleaning the blind preparatory to leaving. The day was still young. Vernon and Gregg had busy agendas and I had a long drive back to Virginia.

I still don't know how my North Carolina friends feel about steel shot. They have strong reservations I suspect. "Steel won't mushroom or flatten out. The shot goes right through the bird," was the only comment. That from Vernon Barrington.

Being neither a ballistics expert nor a biologist, I don't intend to drag out the lead-versus-steel argument, a controversy that has raged for well over a decade now. The subject has been hammered beyond the point of mere redundancy. All have had their say, and attempts at sound biological approaches have been tainted heavily by emotionalism. The rich tradition of lead shotshells isn't going to fade easily, but the democratic process has been allowed to work; the jury is in, and the age of steel has arrived. It is the law of the land for the waterfowler.

I, personally, don't have any problem with this turn of events.

I've been shooting steel shot since the mid-1970's when it first became mandatory in the Back Bay region. Over the seasons since, I've taken a great variety of waterfowl with steel shot. Both Canada and snow geese, gadwall, mallards, scaup, teal and other ducks have fallen before steel shot spewed from the barrels of my battered old 12-gauge Browning and my newer Remington with its 30-inch full-choke tube and 3-inch chamber.


*It may be a tad more expensive than cheap lead shotshells, but regulations and saving ducks aside, steel shot performs well enough to be worth the extra money. The proof is in the field.*

The late 1970's and early 1980's were glory years for the Back Bay waterfowl hunter. Those lucky enough to draw blinds on the Barbours Hill or Pocahontas Waterfowl Management Areas were all but assured of good shooting. Those were good years, steel-shot years. I thought nothing of getting a couple of hours of sleep, arising at midnight, and making the long, 170-mile drive to Back Bay to meet those spectacular sunrises over the cold and often frozen marshes. And the fact that I was forced to shoot steel shot didn't detract from the joy of it all. Not an iota.

In the process I learned to hunt with steel shot. Sure, adjustments were required, but adjustments are a part of waterfowl hunting. Like getting up at midnight. The modern world, be it hunting or something else, is one of constant adjustments.

As a starter, I had to give up my beloved high-brass No. 6's. High-brass No. 4's are the duck hunter's steel load. And the shot string was shorter I was told. This called for an adjustment in lead on passing shots. Nor is the range of steel shot as great as that of lead. How many times did I hear that? But it made sense. After all, lead is heavier. But I was switching from No. 6's to No. 4's. Wouldn't that compensate for the difference? Sure, I had questions. All waterfowl hunters did. Many questions.

That early ballistical data translated to practical hunting information seemed to dictate shorter leads for pass shooting and a willingness on the part of the hunter to let the ducks come in closer when shooting over decoys. Definitely no sky-busting with steel shot. Such adjustments certainly imposed no great inconvenience on the hunter, though I'm not so doggoned sure that the range of modern steel shot is much less than that of lead. It should be of no consequence when shooting over decoys. Ducks dropping into a spread of decoys is one of the greatest thrills in hunting, and the closer they come the greater is the joy. Let them come on in. Enjoy the moment to the fullest. It matters little that you are shooting steel.

Certainly it doesn't hurt to brush up on the ballistical differences between lead and steel shot, but the real proof is in the shooting. You'll get your answers there. Pattern your gun or guns. String up some sheets of paper. Even news-

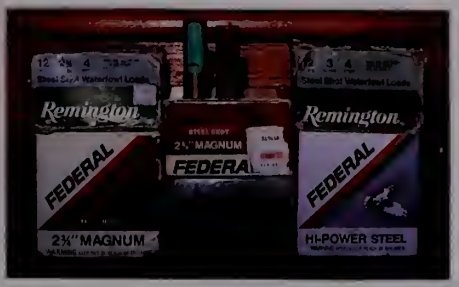
paper will work in a pinch, and shoot a variety of loads through your guns. Study the shot pattern that each load produces and you will come up with the best gun-shell combination. One load will probably stand out above the others, but don't be surprised if several different loads prove entirely satisfactory for hunting purposes. Even a small teal is a big enough bird that it won't slip through most shotgun patterns.

The ultimate test, however, comes under actual hunting conditions. It is in the marshes or grainfields that you will iron out the kinks—if there are any. There you will make the little adjustments that a successful switch to steel shot may require. In the end they are actually minor. After a few good days in a Back Bay blind I wasn't even conscious of the differences.

Steel loads were not readily available in those early years. That was how I came to build up an abundant supply. None of the gun shops near my central Virginia home carried them. I had to rely on the Tidewater outlets, but you don't find many open between midnight and dawn, the usual hours I passed the shopping centers en route to Back Bay. Consequently, I made it a point to stock up at every opportunity. The ever optimistic hunter doesn't want to chance running out of ammunition!

That early affair with steel shot stayed ahead of its critics well into the 1980's. When I thumbed through my old copies of the hunting regulations, I found that steel shot was the law for the 1982-83 season, but no mention of it was made in the 1983-84 edition. It was a year many hunters uttered sighs of relief and disposed of their stocks of steel shotshells.

I didn't. I had a good supply on my shelves, and besides, I had no real problems with steel shot. I continued to shoot steel, often alongside fellow hunters who were shooting lead. I felt no real handicap, and I doubt that many of my hunting companions even knew I was not shooting lead. A good supply of No. 2, 3-inch Magnums from the old days was the reason I was shooting steel loads on the North Carolina swan hunt.




Generally, Back Bay hunting is shooting over decoys. That was most of my waterfowling experience back in the late 1970's and early 1980's. There were a few passing shots at Canada geese and lone ducks, and Barbours Hill hunters got some early-morning shooting at snow geese leaving the refuge to feed in the grainfields. I didn't get enough pass shooting to work on lead, however, and it was not until I drove north to Maryland's goose-rich Eastern Shore that I gave steel loads a real workout on pass shooting.

When I headed north for Canada geese, I took along my Remington 12-gauge goose and turkey gun and plenty of 3-inch Magnums, both No. 2's and No. 1's. Big Canada's winging over my field blind gave me plenty of chances to test those steel loads on pass shooting, to work out the proper lead. I came away with a limit of geese and complete satisfaction with the new shotshells.

During that early trial period, the enforcement of steel shot in Maryland was a lukewarm effort at the best. I often found myself shooting with hunters who were loading lead in their prize guns. Again, I didn't feel that the differences between their loads and mine were particularly obvious. They brought down geese and so did I. They missed and I missed. I don't recall losing any cripples.

Pass shooting often calls for some long shots, shots I don't like to take. I was sharing a Maryland blind with Earl Shelsby one bright November morning when a small flock of Canadas passed over our heads. We dropped a pair, and as I was lowering my gun I noticed Earl trying for a double though the flock was rapidly getting beyond range.

"Too fa . . . .' " but the blast of his 12-gauge cut me short. Much to my amazement, the big bird folded and hit the ground with a thud.

"How far was that?" I asked the guide.

"Close to a 100 yards," he said shaking his head in disbelief.

Shelsby was shooting 3-inch Magnum No. 1 steel loads.

I hesitate to take long shots like that, even with lead loads, but Shelsby's clean kill and my swan shot serve to prove that steel shot can be highly effective.

Sure, I've lost some cripples over the seasons, but I also lost some when I was shooting lead loads. I've seen no increase in lost birds since switching to steel. I suppose I am generally more conscious about limiting myself to close-range shooting. That's the advice that tends to surface first when the conversation gets around to steel shot, but isn't that equally sound for lead? I think so. Those long-range, almost impossible shots may be proud moments in the hunter's life, but very few shotgunners can make them successfully with any degree of consistency. We all try occasionally, but it's best to let those birds go.

The tubes of my waterfowl guns are as shiny and unscathed today as they were the day I shot my first steel load well over a decade ago. Whether they will be in as good shape ten years hence only time will tell. Maybe I don't do as much waterfowl shooting as some hunters do. Admittedly, I would like to work in more than the half dozen or so trips I manage each year, and given the opportunity I won't hold back because of fear of damage to my gun barrels. Shooting the barrel out of a shotgun is an experience few ever enjoy.

To me it was evident back in the 1970's that steel was going to be the waterfowl load of the future. Now I am even more convinced.

If shoulder-to-shoulder we can help our Virginia duck populations recover from the low ebb of recent seasons, we can continue to enjoy the sport that has such a rich tradition in the Commonwealth.

And we can enjoy it with steel shot. □

*Bob Gooch is an outdoor writer living in Troy, Virginia.*

# 1987 Virginia Big Game Contest

The Eastern Regional and State Championship will be held on October 9 and 10 at the Julius Conn Gymnasium in Newport News this year. Entry deadline is 12:00 p.m. on October 10. Whitetail deer, classes I-IV will be judged, along with black bear and wild turkey and big game citations. All entries must have been bagged in Virginia with a legal sporting weapon during the 1986-87 hunting season. Game bagged east of the Blue Ridge may be entered in the Eastern Regional contest. Scores will be determined using the Virginia scoring system, and each entry must be accompanied by its Virginia Big Game Check Tag. For more information, contact: Charles A. Rogers, President, Virginia Peninsula Sportsmen's Association, Inc., P.O. Box 1933, Newport News, VA 23601, phone: 804/220-3711. □

# Turtle Goof

We goofed on the identification of the turtle on the cover of our August issue. The turtle pictured is the red-eared slider *(Trachemys scripta elegans)*, rather than the yellow-bellied slider *(Trachemys scripta scripta)*. Note the tell-tale red ear patch and the darkened plastron, which escaped the weak eyes of the editor. Although the two are the same species, the yellow-bellied is a subspecies native to the Eastern United States, and the red-eared is a Mississippi Valley turtle, introduced into our state through the pet trade and individuals "liberating" their pet turtles into the wild. Unfortunately, the red-eared has prospered in the Old Dominion, hybridizing with the native yellow-bellied, and altering the gene pool of our native turtle. Sadly, it seems that a red-ear is as good as a yellow belly to sliders and dim eyed editors. □

## From the Backcountry

# Money For Marine Mammals Research

The Virginia Game and Inland Fisheries Department's Nongame and Endangered Species Program recently awarded a $50,000 research grant to the Virginia Institute of Marine Science (VIMS) to study cetacean ecology in Virginia. This grant was bolstered by $10,000 of VIMS own money for a total of $60,000 to support this research on marine mammals.

Although prompted by a mass die-off of bottle-nosed dolphin, this money will be used to study several phases of marine mammal biology in Virginia. Because of its location along the Mid-Atlantic coast, Virginia receives strandings of a variety of animals, including offshore species. These include fin whales, right whales, pigmy sperm whales, false killer whales, pilot whales, beaked whales, and the bottle-nosed dolphin. And, this summer's unusual mass strandings of bottle-nosed dolphin will cause a drastic shift in the dolphin population along the Atlantic coast.

In the past, marine mammal research in Virginia has received little monetary support, surviving as low level or side projects to other research. This recent grant will provide the opportunity for a more in-depth program concentrating on the Virginia area, under the direction of Dr. John A. Musick at VIMS.

Aerial survey work funded by this grant will enable researchers to compare previous population distributions with new distributions. The money will also aid the National Marine Fisheries Service (NMFS) in recovering bodies for examination and analysis of feeding habits in bottle-nosed dolphin throughout the fall. Also included in this work will be a pilot analysis to determine if pollutants are present in stranded marine mammals. The money provided by the Nongame and Endangered Species Program is a long awaited and much needed boon to marine mammal research in Virginia. Although the cause of the massive die-off of bottle-nosed dolphin remains a mystery, it is now possible to examine the wider implications of this within the population and support further marine mammal research in Virginia. □

# Help Needed in Marsh Rabbit Study

One of the research projects that the Virginia Department of Game and Inland Fisheries is supporting this year is the study of the marsh rabbit, a game animal that is believed to be restricted to southeastern Virginia. Known to occur as far west as the Hog Island Wildlife Management Area in Surry County, it is unclear how much farther west or north marsh rabbits might occur.

Dr. Robert K. Rose of Old Dominion University, working with two graduate students, will determine the distribution and status of marsh rabbit populations, and examine differences in habitat requirements of marsh rabbits and eastern cottontails.

The research team need skulls from rabbits shot during the hunting season. The two species can be distinguished by features of the skull, so only the skull needs to be saved. Individuals or hunt clubs willing to cooperate in this research project should write to: Dr. Robert K. Rose, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23508 or call 804/440-3595.

The team is also looking for a study site within 30-40 miles of Norfolk, at a location where marsh rabbits occur and can be studied with live traps and radiotelementry. □

# From the Field

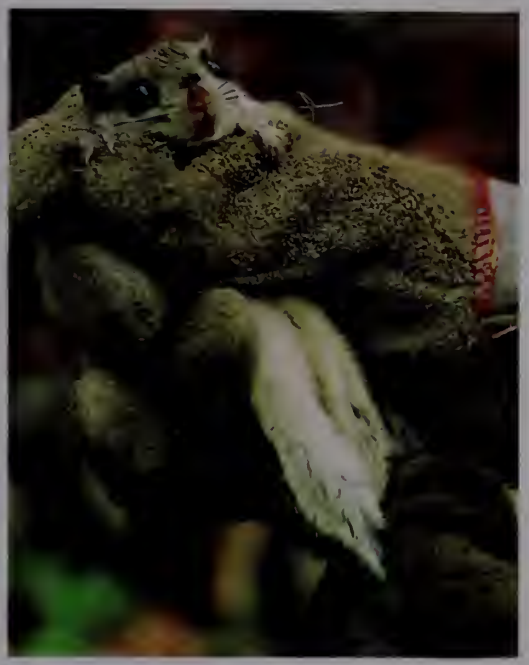
The Game Department is currently involved with research on the federally endangered northern flying squirrel *(Glaucomys sabrinus)* with funds from its special nongame and endangered species fund, which is solely supported by voluntary contributions. While its close cousin, the southern flying squirrel *(Glaucomys volans)*, is relatively common in Virginia, the northern flying squirrel is quite rare and hard to find.

In an attempt to determine the distribution of the northern flying squirrel in Virginia, Game Department biologists Mike Fies, John Baker, and Rod McClanahan, along with Wildlife Management Area Supervisors Jay Jeffreys, Jim Haulsee, and Roy Swartz, and nongame cooperator Dr. John Pagels of Virginia Commonwealth University, have installed almost 300 nest boxes throughout the western portion of the state. But, finding these elusive squirrels has been difficult, since they prefer spruce forests at high elevations, and very little of this habitat remains in the state.

In cooperation with the U.S. Forest Service, and particularly wildlife biologist Bob Glasgow of the George Washington National Forest, nest boxes have been monitored regularly since the spring of 1986. So far, seven northern flying squirrels and 352 southern flying squirrels have been captured. These squirrels have been ear-tagged, weighed and released.

In areas where the northern species has been found, the habitat will be managed to assure protection of the squirrel. Valuable information about reproduction and food habits of the squirrel is also being collected. In the meantime, the Game Department is currently meeting with representatives from other states and is helping the U.S. Fish and Wildlife Service draft a recovery plan that will help protect the squirrel throughout its entire range.

For more information about the Nongame and Endangered Species Program or to make a contribution, simply write to the Education Division, Virginia Department of Game and Inland Fisheries, P O. Box 11104, Richmond, VA 23230-1104. □



*Southern flying squirrel; photo by Dennis Martin.*

*Assembling equipment to hike in nest boxes to Cabin Creek in the Mt. Rogers NRA; photo by Mike Fies.*

V·I·R·G·I·N·I·A'·S

# The Eastern Woodrat

by John Pagels
photo by Rob Simpson

W·I·L·D·L·I·F·E

We didn't have much luck then collecting the bats that were flying around a streetlight in Virgin, Utah, and it didn't improve when the highly disturbed town marshal rode up on his motor scooter, and demanded that we hand over our, ah, collecting gear. Our professor in trying to explain our scientific interests—and to keep us out of jail—described the great diversity of bats. But the marshal was unimpressed and exclaimed, "a bat's a bat, and that's that!" Many people think the same about rats. In fact, there are hundreds of species of rats, and including the muskrat, cotton rat and rice rat, there are no less than four species of rats native to Virginia, not to mention introduced species of the genus *Rattus*, the black rat and the ubiquitous Norway rat.

Like many of the more than 20 species in its genus, the Eastern woodrat, *Neotoma floridana*, with its large dark eyes, soft fur, big ears, and somewhat hairy tail appears, and is, more like an overgrown white-footed mouse than that denizen of our barns and alleys, the Norway rat. Probably no other rat wears more hats than the Eastern woodrat. Restricted to the western portion of the Commonwealth, the woodrat is most often associated with rocky outcroppings, areas with numerous large boulders or, very often, caves.

Cave rat! Vibrissae, or whiskers, are functional adornments of most wild mammals, but there are probably very few groups in which the vibrissae are more pronounced than in this rat. Being nocturnal, in general, and in the total darkness of caves, in particular, the greatly elongated vibrissae, up to four of five inches long, are presumably of great importance in helping the woodrat perceive its environment.

Woodrats are best known for the houses that they construct, often under projecting rock outcrops, but the houses may be nearly anywhere; at the base of a hollow tree, in a crevice in a rock wall and occasionally in or under a vacant outbuilding. Sticks, twigs, bones, bark, rocks, whatever the woodrat can carry, are used to construct the houses that may reach three or four feet high and sometimes twice that diameter. Man's visit to an area is often memorialized by some of the building materials—in caves, wrappings from film and other litter are standard components.

Pack rat! Woodrats instinctively store food, and pantry areas near the top of its house may contain various foods but especially acorns, nuts and fruits and bark of various species. Coarse materials make up the bulk of the house, but each house contains one or two nests that are more typical of a rodent. These are composed of finely shredded bark, grasses and other fine material.

Woodrats are often highly territorial, and except for the reproductive season, woodrats are intolerant of each other, and a house is inhabited by a single woodrat. One researcher found that if the female became dominant during preliminary activities at mating time, fighting ensued and the male was usually killed. If the male became dominant there was little fighting, thank heaven, and after about 33 days one to five woodrat pups make their appearance.

Although their house may look like a yard cleaning job piled neatly under a big rock, woodrats are very clean and sanitary animals. Without moden conveniences, scats are deposited in latrine areas several feet away from the house and there are similar urinating spots. The woodrat's presence in rocky areas in particular is sometimes given away by conspicuous dark stains at such spots. Woodrats regulary cleanse their fur by licking, and washing their faces using a circular motion with dampened paws.

In the most northerly parts of its range, such as New York, the Eastern woodrat seems to be in trouble; there appears to have been a fairly recent and dramatic decline in its numbers. Its status in Virginia is currently under assessment. It would be a shame if, on evenings along the Appalachian Trail, we couldn't sometimes catch a glimpse of a woodrat, see bats silhouetted overhead and hear owls hooting afar. But we must be a bit cautious, lest we awaken in the morning to find a stick, a twig and a rock nearby, while in a rocky crevice a woodrat sleeps beside its new possessions: a case containing our contact lenses, our jackknife and a plastic bag full of matches. Trade rat! □

*John Pagels is a mammalogist at Virginia Commonwealth University, and solicits any comments you might have on the status of the woodrat in Virginia.*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